

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY



REGION 4

61 Forsyth Street  
Atlanta, Georgia 30303

**MEMORANDUM**

DATE: May 12, 2003

To: Brad Jackson, RPM  
South Superfund Branch

From: Jon Richards, Regional Radiation Expert  
Office of Technical Services

**Summary of FL Dept of Health's Pre & Post Phosphate Mining Reports**

FL Statute 404.131 authorizes the Dept to conduct radiation monitoring for phosphate extracting industries from soil in the state. They conduct 4 types of monitoring: gamma radiation surveys, soil characterization and measurement, air sampling [radon], and water monitoring. Soil sampling was conducted at 1 foot intervals down to 6 feet.

Each report covers the period from July 1<sup>st</sup> to the following June 30<sup>th</sup>. The table covers the yearly reports from 1987-2000.

**Sampling Stats:**

1 gamma exposure meas or survey/1 acre  
1 soil sample/20 acres  
1 water sample/qtr from 40 predesignated SW[28] & GW[12] locations

The median Radium-226 conc'n is 4 to 22 times higher on reclaimed land then on premined land, depending on depth. The median gamma exposure is approximately 2 to 3 times greater on reclaimed areas than background or premined areas.



10765518

### Summary of FL's Data

	measurements [#] & acres mined/ reclaimed	# of sites monitored [reclaimed]	avg pre- mined [uR/hr] ~bkgd	avg post- mined uR/hr [% > 20]	reclaimed @ 1 ft % > 5 pCi/g	reclaimed @ 6 ft. % > 5 pCi/g	max Ra226 in SW/GW pCi/L [MCL=5]
7/99- 6/00	12,325 5920/4300	422 [137]	4	11 [8.8%]	55%	51%	15.6
7/98- 6/99	10,102 5920/4300	314 [94]	4	10 [3.2%]	42%	37%	15.6
7/97- 6/98	11,439 6190/5428	393 [155]	4.7	9.6 [7.1%]	53%	48%	7.6
7/96- 6/97	12,870 6685/7805	435 [195]	4.7	10.8 [4.7%]	57%	40%	15.5
7/95- 6/96	13,739 6308/6922	491 [163]	4.5	10.8 [8.6%]	50%	38%	16.5
7/94- 6/95	11,105 5316/5648	389 [130]	5	9.8 [8.7%]	48%	40%	15.0
7/93- 6/94	12,379 4533/5539	448 [262]	5	10.8 [8.8%]	57%	51%	15.6
7/92- 6/93	13,000 6053/7011	471 [230]	5	12.2 [8.7%]	50%	32%	16.1
7/91- 6/92	14,000 5856/7742	456 [131]	5.1	13.6 [35.1%]	66%	60%	14.4
7/90- 6/91	6,000 6286/7986	317 [114]	4.8	15.7 [17.6%]	59%	47%	16.0
7/89- 6/90	8,000 6590/10152	274 [65]	6.1	19.2 [30.8%]	67%	60%	14.8
7/88- 6/89	10,000 5423/6074	335 [99]	5.5	12 [11.1%]	48%	33%	15.7
7/87- 6/88	13,000 5283/4899	373 [142]	6.4	13.5 [29%]	51%	40%	13.9